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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,914	01/26/2004	Andreas Sibrai	DS03-005B	3363
7590	08/19/2005			EXAMINER
STEPHEN B. ACKERMAN 28 DAVIS AVENUE POUGHKEEPSIE, NY 12603				NGUYEN, HIEP
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/764,914	SIBRAI ET AL. <i>(RM)</i>	
	Examiner Hiep Nguyen	Art Unit 2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 20 June 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-23 and 26-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-23 and 26-52 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                         |                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                                                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)              |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____.                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The amendment filed on 06-20-05, creates more 112, 2<sup>nd</sup> problems. New ground(s) of rejection is set forth below. The following is a quotation of the second paragraph of 35 U.S.C. 112:

### *Claim Rejections - 35 USC § 112*

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-23 and 26-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction and/or clarification is required.

Regarding claim 1, the recitations “a circuit to individually provide the threshold points to each individual capacitor switching stage” on line 17 and 18 is indefinite because it is not clear what is the “each individual capacitor switching stage” in the drawing. Figure 9 of the present application shows that the voltage divider (R1-R0) provides the threshold voltage to the amplifiers, not to “each individual capacitor switching stage”. It is also not clear what are two different circuits: “a set of circuits” on line 10 and “a set of translinear amplifier stages ”on line 13. They appear to be two different circuits but they perform a same function.

Regarding claim 17, the recitation “ a circuit” on line 17, “a circuit” on line 21 and “a set of translinear amplifier stages” on line 25 are indefinite because it is not clear if they are the same or different from each other. The “ a circuit” on line 17 comprises amplifiers that drives switching device (Sw1-Swn). The “a circuit” on lines 21 drives the same switching devices. The “set of translinear amplifier stages” on line 25 also drives switching devices because it produces the ramp-up/down signal for each of said set of switching device”. Clear explanation is required.

Regarding claim 18-21, the recitation “ wherein said circuit to drive said switching device to a fully-on status, when said switching device is outside its desired steady transition area on the lower resistance side is provided by additional circuit elements, working as a signal-limiting function” in claim 18 is indefinite because it is not clear what “working as a signal-limiting function” is meant by. It is not clear what are the additional circuit elements in the drawing. Clear explanation is required. The recitations “outside its desired steady transition on the lower (higher) resistance side is provided by additional circuit elements, working as a signal limiting function” in claims 18-21 are indefinite because it is not clear what are the “additional circuit elements” that are added to the circuit and what is “working as signal limiting function”. The same rational is true for claims 44 and 45.

Regarding claim 23, the recitation “which gives one more degree of freedom to optimize operating parameters, like overlapping of capacitor switching operation and signal cut-off at the edges of the steady transition area.” is indefinite because it is not clear what is the “signal cut-off at the edges of the steady transition area.” is meant by and how to perform the “overlapping of capacitor switching operation”.

Regarding claim 26, the recitation “a circuit” on line 17 and “a circuit” on line 21 are indefinite because they are confusing. The “circuit” on line 17 and the “circuit” line 21 both control the switching stage. The Applicant is requested to point out the difference between these two circuits.

Regarding claim 29, the recitation “a set of switching devices allowing a steady ramp-up/ramp-down phase...” on lines 6-7 is indefinite because it is misdescriptive. Figures 7 and 9 shows that the ramp-up/ramp-down phase is controlled by the amplifiers generating ramp-up/ramp-down phase for gates control signals for the switches. The switches themselves do not generate “ramp-up/ramp-down phase”. The “ a set of circuit” on line 11 and “a set of translinear amplifier stages” on line 14 are indefinite because these different circuits perform a same function that is controlling the switch operation. The recitation “a circuit to individually provide the threshold points for each individual capacitor switching stage” on lines 18-19 is indefinite because it is misdescriptive. Figure 9 of the present application shows

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that the voltage divider (R1-R0) provides the threshold voltage to the amplifiers, not to “each individual capacitor switching stage” as recited.

Regarding claim 31, the recitation “a circuit to provide a non-linear relation between said tuning voltage and said threshold points is provided... in a way, to achieve said desired non-linear relation” on lines 1-4 is indefinite because it is not what is this circuit and how this circuit can “provide a non-linear relation between said tuning voltage and said threshold points”. Claim 31 is also misdescriptive because figure 9 of the present application shows no means for selecting “steps up of said set of reference values (?)” to “achieve said desired non-linear relation”. Clear explanation is required.

Regarding claim 33, the recitation “a set of circuits” on line 9, “a set of translinear amplifier” on line 12, a circuit on line 15 and “a circuit” on line 16 are indefinite because they are confusing These different circuits perform a same function that is controlling the switching devices. The Applicant is requested to point out these circuits in the drawing.

Regarding claim 43, the recitation “ a set of circuits” on lines 10, “a circuit” on line 14 and “a circuit” on lines 16 are indefinite because they are confusing. The different circuits perform the same function that is generating control signals for the switching devices. The Applicant is requested to point out these circuits in the drawing. The recitation “a circuit to individually provide the threshold points for each individual capacitor switching stage” on lines 20-21 is indefinite because it is misdescriptive. Figure 9 of the present application shows that the voltage divider (R1-R0) provides the threshold voltage to the amplifiers, not to “each individual capacitor switching stage” as recited.

Regarding claims 44 and 45, the recitations “ when said switching device is outside its desired steady transition are on the lower resistance side uses additional circuit elements working as a signal limiting function ”in claim 44;“ when said switching device is outside its steady transition are on the higher resistance side uses additional circuit elements, working as a signal limiting function ” in claim 45 are indefinite because it is not clear what are the a’

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additional circuit elements and how they work as” a signal limiting function”. The recitation “steady transition” in claim 45 lacks antecedent basis.

Regarding claim 46, the recitation “when said switching device is outside its steady transition area on the lower resistance is implemented within the translinear amplifier” is indefinite because it is not clear what is” implemented within the translinear amplifier”. Explanation is required. The recitation” steady transition” lacks antecedent basis.

Regarding claim 47, the recitations “ a circuit” on line 8 and “a circuit” on line 12 are indefinite because they are recited to be two different circuits, but in fact they all perform a same function that is controlling the switching devices. The “a circuit” on line 10 is indefinite because it is not clear what it is and how it can compensate the temperature deviation of the switching device.

Regarding claim 50, the recitation “... but with predefined non-linear relation to the tuning voltage, through a tuning voltage and to achieve a high Q-factor at the same time comprising: providing a set of individual small capacitors, a set of switching devices with steady transition phase to continually switch on said capacitors in parallel” is indefinite because it in not clear what “non-linear” and “steady transition phase” is meant by. Explanation is required.

Claims 2-16, 22, 27, 28, 30, 32, 34-42 and 51 are indefinite because of the technical deficiencies of claims 1, 17, 26, 29, 33, 43, 47 and 50.

#### ***Allowable Subject Matter***

Claims 1-23 and 26-52 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 1-23 and 26-52 would be allowable because the prior art of records (US Pat. 6,577,189) fails to teach or fairly suggest a circuit to control the capacitance of a variable capacitor in a strictly linear mode comprising a set of transfer amplifier as called for in claims 1, 17, 26, 29, 33, 42 and 50.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hiep Nguyen whose telephone number is (571) 272-1752. The examiner can normally be reached on Monday to Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on (571) 272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hiep Nguyen

08-15-05



TUAN T. LAM  
PRIMARY EXAMINER